



## Complete Summary

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### TITLE

Cardiac rehabilitation: percentage of cardiac rehabilitation programs in the healthcare system that meet specified structure-based performance measure criteria.

### SOURCE(S)

Thomas RJ, King M, Lui K, Oldridge N, Pina IL, Spertus J, ACC/AHA Task Force Members. AACVPR/ACC/AHA 2007 performance measures on cardiac rehabilitation for referral to and delivery of cardiac rehabilitation/secondary prevention services. J Cardiopulm Rehabil Prev 2007 Sep-Oct;27(5):260-90. [74 references] [PubMed](#)

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Thomas RJ, King M, Lui K, Oldridge N, Pina IL, Spertus J, Bonow RO, Estes NA 3rd, Goff DC, Grady KL, Hiniker AR, Masoudi FA, Radford MJ, Rumsfeld JS, Whitman GR, AACVPR, ACC, AHA, American College of Chest Physicians, American College of Sports Medicine, American Physical Therapy Association, Canadian Association of Cardiac Rehabilitation, European Association for Cardiovascular Prevention and Rehabilitation, Inter-American Heart Foundation, National Association of Clinical Nurse Specialists, Preventive Cardiovascular Nurses Association, Society of Thoracic Surgeons. AACVPR/ACC/AHA 2007 performance measures on cardiac rehabilitation for referral to and delivery of cardiac rehabilitation/secondary prevention services. J Am Coll Cardiol 2007 Oct 2;50(14):1400-33. [74 references] [PubMed](#)

## Measure Domain

### PRIMARY MEASURE DOMAIN

Structure

The validity of measures depends on how they are built. By examining the key building blocks of a measure, you can assess its validity for your purpose. For more information, visit the [Measure Validity](#) page.

### SECONDARY MEASURE DOMAIN

Does not apply to this measure

## **DESCRIPTION**

This measure is used to assess the percentage of cardiac rehabilitation programs in the health care system that meet specified structure-based performance measure criteria.

## **RATIONALE**

The delivery of cardiac rehabilitation (CR) services is physician directed and provided by a multidisciplinary staff of healthcare professionals. A system for communication between a physician-director with expertise in cardiovascular disease (CVD) management and a referring or primary physician enhances the program's success in helping that patient achieve individualized target goals. It is the responsibility of the physician-director to assure that the information and instruction given to patients in CR is consistent with the most current clinical practice guidelines.

There is a growing trend among patients referred to and completing early outpatient CR to be older, at higher risk, and have more chronic comorbidities. Medical supervision is the most important day-to-day safety factor in CR. Personnel and equipment for advanced cardiac life support (ACLS) are essential to the adequate delivery of emergency care for patients who experience cardiac arrest or other life-threatening events during CR sessions.

Although rare, cardiovascular emergencies can occur during exercise training in CR programs. Studies suggest that the incidence of cardiac arrest requiring defibrillation is approximately 1 arrest every 100,000 patient hours. Practice guidelines for management of cardiac arrest include the use of basic life support (BLS) and ACLS strategies, such as early defibrillation. Such strategies have been shown to help improve outcomes in persons who experience cardiac arrest.

Some CR programs seek certification of their program by healthcare organizations, such as the American Association of Cardiovascular and Pulmonary Rehabilitation (AACVPR), in order to show that they meet certain standards for the delivery of CR services. Such a certification process, while outside the scope of this document, may result in documentation of a program's ability to meet this and other CR performance measures. Currently, for instance, CR program certification through the AACVPR requires that all policies specified in this measure are in place and operational.

## **PRIMARY CLINICAL COMPONENT**

Cardiac rehabilitation program; structure-based performance measurement criteria (physician director, emergency response team, basic life support [BLS], advanced cardiac life support [ACLS], emergency resuscitation equipment and supplies)

## **DENOMINATOR DESCRIPTION**

All cardiac rehabilitation (CR) programs within a healthcare system

## **NUMERATOR DESCRIPTION**

The number of cardiac rehabilitation (CR) programs in the healthcare system that meet specified structure-based performance measure criteria (see the related "Numerator Inclusions/Exclusions" field in the Complete Summary)

### **Evidence Supporting the Measure**

## **EVIDENCE SUPPORTING THE CRITERION OF QUALITY**

- A clinical practice guideline or other peer-reviewed synthesis of the clinical evidence
- A systematic review of the clinical literature
- One or more research studies published in a National Library of Medicine (NLM) indexed, peer-reviewed journal

### **Evidence Supporting Need for the Measure**

## **NEED FOR THE MEASURE**

Use of this measure to increase capacity

## **EVIDENCE SUPPORTING NEED FOR THE MEASURE**

Balady GJ, Williams MA, Ades PA, Bittner V, Comoss P, Foody JA, Franklin B, Sanderson B, Southard D, American Heart Association Exercise, Cardiac Rehabilitation, and Prevention, Council on Clinical Cardiology, Councils on Cardiovascular Nursing, Epidemiology and Prevention, and Nutrition,, American Association of Cardiovascular and Pulmonary Rehabilitation. Core components of cardiac rehabilitation/secondary prevention programs: 2007 update: a scientific statement from the American Heart Association Exercise, Cardiac Rehabilitation, a. J Cardiopulm Rehabil Prev 2007 May-Jun;27(3):121-9. [PubMed](#)

King ML, Williams MA, Fletcher GF, Gordon NF, Gulanick M, King CN, Leon AS, Levine BD, Costa F, Wenger NK, American Association for Cardiovascular and Pulmonary Rehabilitation, American Heart Association. Medical director responsibilities for outpatient cardiac rehabilitation/secondary prevention programs. A statement for healthcare professionals from the American Association for Cardiovascular and Pulmonary Rehabilitation and the American Heart Assoc. J Cardiopulm Rehabil 2005 Nov-Dec;25(6):315-20. [PubMed](#)

### **State of Use of the Measure**

## **STATE OF USE**

Pilot testing

**CURRENT USE**

Internal quality improvement

**Application of Measure in its Current Use****CARE SETTING**

Ambulatory Care  
Home Care  
Hospitals  
Physician Group Practices/Clinics  
Rehabilitation Centers

**PROFESSIONALS RESPONSIBLE FOR HEALTH CARE**

Advanced Practice Nurses  
Allied Health Personnel  
Dietitians  
Nurses  
Physician Assistants  
Physicians

**LOWEST LEVEL OF HEALTH CARE DELIVERY ADDRESSED**

Single Health Care Delivery Organizations

**TARGET POPULATION AGE**

Does not apply to this measure

**TARGET POPULATION GENDER**

Does not apply to this measure

**STRATIFICATION BY VULNERABLE POPULATIONS**

Does not apply to this measure

**Characteristics of the Primary Clinical Component****INCIDENCE/PREVALENCE**

Unspecified

**ASSOCIATION WITH VULNERABLE POPULATIONS**

Unspecified

**BURDEN OF ILLNESS**

Unspecified

**UTILIZATION**

Unspecified

**COSTS**

Unspecified

**Institute of Medicine National Healthcare Quality Report Categories****IOM CARE NEED**

Not within an IOM Care Need

**IOM DOMAIN**

Not within an IOM Domain

**Data Collection for the Measure****CASE FINDING**

Does not apply to this measure

**DENOMINATOR SAMPLING FRAME**

Does not apply to this measure

**DENOMINATOR INCLUSIONS/EXCLUSIONS****Inclusions**

All cardiac rehabilitation (CR) programs within a healthcare system

**Exclusions**

Unspecified

**RELATIONSHIP OF DENOMINATOR TO NUMERATOR**

Does not apply to this measure

**DENOMINATOR (INDEX) EVENT**

Does not apply to this measure

## **DENOMINATOR TIME WINDOW**

Does not apply to this measure

## **NUMERATOR INCLUSIONS/EXCLUSIONS**

### **Inclusions**

The number of cardiac rehabilitation (CR) programs in the healthcare system that meet defined structure-based performance measure criteria\*

\*The CR program has policies in place to demonstrate that:

1. A physician-director is responsible for the oversight of CR program policies and procedures and ensures that policies and procedures are consistent with evidence-based guidelines, safety standards, and regulatory standards. This includes appropriate policies and procedures for the provision of alternative CR program services, such as home-based CR.
2. An emergency response team is immediately available to respond to medical emergencies. In a hospital setting, physician supervision is presumed to be met when services are performed on hospital premises. In the setting of a freestanding outpatient CR program (owned/operated by a hospital, but not located on the main campus), a physician-directed emergency response team must be present and immediately available to respond to emergencies. In the setting of a physician-directed clinic or practice, a physician-directed emergency response team must be present and immediately available to respond to emergencies.
3. All professional staff members have successfully completed the National Cognitive and Skills examination in accordance with the American Heart Association (AHA) curriculum for basic life support (BLS) with at least 1 staff member present who has completed the National Cognitive and Skills examination in accordance with the AHA curriculum for advanced cardiac life support (ACLS) and has met state and hospital or facility medico-legal requirements for defibrillation and other related practices.
4. Functional emergency resuscitation equipment and supplies for handling cardiovascular emergencies are immediately available in the exercise area.

### **Exclusions**

Unspecified

## **MEASURE RESULTS UNDER CONTROL OF HEALTH CARE PROFESSIONALS, ORGANIZATIONS AND/OR POLICYMAKERS**

The measure results are somewhat or substantially under the control of the health care professionals, organizations and/or policymakers to whom the measure applies.

## **NUMERATOR TIME WINDOW**

Encounter or point in time

## **DATA SOURCE**

Special or unique data

## **LEVEL OF DETERMINATION OF QUALITY**

Does not apply to this measure

## **PRE-EXISTING INSTRUMENT USED**

Unspecified

## Computation of the Measure

### SCORING

Rate

### INTERPRETATION OF SCORE

Better quality is associated with a higher score

### ALLOWANCE FOR PATIENT FACTORS

Does not apply to this measure

### STANDARD OF COMPARISON

Internal time comparison

## Evaluation of Measure Properties

### EXTENT OF MEASURE TESTING

The Cardiac Rehabilitation/Secondary Prevention Performance Measure Writing Committee initially identified 39 factors from various practice guidelines and other reports that were considered potential performance measures for the Cardiac Rehabilitation/Secondary Prevention Performance Measurement Sets (see Table 1 of the original measure documentation for standard guidelines that were used to rate the classification of recommendations and level of evidence for assessing these factors). The group evaluated these factors according to guidelines established by the American College of Cardiology/American Heart Association (ACC/AHA) Task Force on Performance Measures. Those measures that were deemed to be most evidence-based, interpretable, actionable, clinically meaningful, valid, reliable, and feasible were included in the final performance measurement sets. Once these measures were identified, the writing committee then discussed and refined, over a series of months, the definition, content, and other details of each of the selected measures.

### EVIDENCE FOR RELIABILITY/VALIDITY TESTING

Thomas RJ, King M, Lui K, Oldridge N, Pina IL, Spertus J, ACC/AHA Task Force Members. AACVPR/ACC/AHA 2007 performance measures on cardiac rehabilitation for referral to and delivery of cardiac rehabilitation/secondary prevention services. J Cardiopulm Rehabil Prev 2007 Sep-Oct;27(5):260-90. [74 references] [PubMed](#)

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Association of Cardiac Rehabilitation, European Association for Cardiovascular Prevention and Rehabilitation, Inter-American Heart Foundation, National Association of Clinical Nurse Specialists, Preventive Cardiovascular Nurses Association, Society of Thoracic Surgeons. AACVPR/ACC/AHA 2007 performance measures on cardiac rehabilitation for referral to and delivery of cardiac rehabilitation/secondary prevention services. J Am Coll Cardiol 2007 Oct 2;50(14):1400-33. [74 references] [PubMed](#)

## Identifying Information

### ORIGINAL TITLE

Performance measure B-1: structure-based measurement set.

### MEASURE COLLECTION

[Cardiac Rehabilitation/Secondary Prevention Performance Measurement Sets](#)

### MEASURE SET NAME

[Cardiac Rehabilitation/Secondary Prevention Performance Measurement Set B](#)

### DEVELOPER

American Association of Cardiovascular and Pulmonary Rehabilitation/American College of Cardiology/American Heart Association

### FUNDING SOURCE(S)

The Writing Committee had one face-to-face meeting at the outset of the writing project. Funding travel to the meeting was covered by the respective organizations (American Association of Cardiovascular and Pulmonary Rehabilitation [AACVPR], American College of Cardiology [ACC], and American Heart Association [AHA]). Conference calls were paid for by AACVPR. Other than in these cases, there were no other funding sources or reimbursements provided.

### COMPOSITION OF THE GROUP THAT DEVELOPED THE MEASURE

*American Association of Cardiovascular and Pulmonary Rehabilitation (AACVPR) Representatives:* Randal J. Thomas, MD, MS (Physician, Preventive Cardiologist, Mayo Clinic, Rochester, MN); Marjorie King, MD (Physician, Cardiologist, Helen Hayes Hospital, West Haverstraw, NY); Karen Lui, RN, C, MS (Nurse, GRQ Consulting Firm, Washington, D.C.); Neil Oldridge, PhD (Exercise Science/Physiology, University of Wisconsin-Milwaukee, Milwaukee, WI).

*American College of Cardiology (ACC) Representatives:* Ileana Piña, MD (Physician, Cardiologist, Case Western Reserve University, Cleveland, OH).



*American Heart Association (AHA) Representatives: John Spertus, MD, MPH (Physician, Cardiologist, Mid America Heart Institute/University of Missouri-Kansas City, MO).*

## **FINANCIAL DISCLOSURES/OTHER POTENTIAL CONFLICTS OF INTEREST**

### **Author Relationships with Industry -- American Association of Cardiovascular and Pulmonary Rehabilitation (AACVPR)/American College of Cardiology (ACC)/American Heart Association (AHA) Cardiac Rehabilitation/Secondary Prevention Performance Measures**

<b>Writing Committee Member</b>	<b>Research Grant</b>	<b>Speakers' Bureau/Honoraria/Expert Witness</b>	<b>Stock Ownership</b>	<b>Consultant/Advisory Board/Steering Committee</b>
Randal J. Thomas, MD, MS, FAHA	Omron, Inc.	None	None	None
Marjorie King, MD, FAACVPR, FACC	None	None	None	Healthways
Karen Lui, RN, MS, FAACVPR	None	None	None	None
Neil Oldridge, PhD, FAACVPR	None	None	None	None
Ileana L. Piña, MD, FACC	Novartis	AstraZeneca	None	Food and Drug Administration (FDA)
	National Institutes of Health (NIH)	Novartis		
John Spertus, MD, MPH, FACC	Amgen	None	Health Outcomes Services	Amgen
	Atherotech		Outcomes Instruments	United Healthcare
	Roche Diagnostics			

## **ADAPTATION**

Measure was not adapted from another source.

## **RELEASE DATE**

2007 Sep

## **MEASURE STATUS**

This is the current release of the measure.

## **SOURCE(S)**

Thomas RJ, King M, Lui K, Oldridge N, Pina IL, Spertus J, ACC/AHA Task Force Members. AACVPR/ACC/AHA 2007 performance measures on cardiac rehabilitation for referral to and delivery of cardiac rehabilitation/secondary prevention services. J Cardiopulm Rehabil Prev 2007 Sep-Oct;27(5):260-90. [74 references] [PubMed](#)

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## **MEASURE AVAILABILITY**

The individual measure, "Performance Measure B-1: Structure-Based Measurement Set," is published in "AACVPR/ACC/AHA 2007 Performance Measures on Cardiac Rehabilitation for Referral to and Delivery of Cardiac Rehabilitation/Secondary Prevention Services." This article is available from the [American Association of Cardiovascular and Pulmonary Rehabilitation](#), the [American College of Cardiology](#), and the [American Heart Association](#) Web sites.

## **NQMC STATUS**

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